



FROM THE DESK OF THE DDSN MEDICAL CONSULTANT



The Single Most Important Way To Stop Spread Of Infection Is To:

- * Wash Your Hands!!
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SPREAD OF INFECTION

This newsletter we look at common infections and how they can be spread. We need to remember that there are many organisms that we live with quite comfortably, but some cause illness and are called pathogens. Most pathogens are viruses or bacteria.

Viruses are packets of genetic material wrapped in protein. They need to invade body cells to survive and reproduce. This activity can cause illness. Antibiotics do not affect viruses and are not useful for illnesses like colds and flu. A cold is spread by a respiratory virus transferring from one person to the next and not by the weather. There are some antiviral drugs now available.

Bacteria are single celled organisms that can divide and grow

themselves if they have the right amount of water, food and warmth. They are everywhere, including on and in your body. Bacteria can become pathogens if they get into areas of the body where they are unwelcome or if they create toxins that do damage. Antibiotics can be used to treat bacterial infections. However, some bacteria can adjust and become resistant to the drugs. Therefore, we need to be responsible in antibiotic use.

Both bacteria and viruses have to move from one host to another for the disease they cause to be spread from one person to another. We can act to reduce this spread if we understand some of the ways it happens.

WAYS THAT INFECTION CAN SPREAD FROM ONE PERSON TO ANOTHER

Spread by Contact

This may be **direct** contact between persons. Examples can be kissing, which can spread Infectious Mononucleosis (called Glandular Fever), or from contact with infected skin or mucus membranes (eyes, mouth, nose, vaginal and rectum) in the course of personal care.

Indirect spread of infection occurs when items that are in contact with an infected person carry pathogens from that person to a second person. The item becomes a vehicle for disease transmission (e.g. infected wound dressings).

Spread by Airborne Route

This happens by droplets in the air with the pathogens in them. The droplets may come from an infected person sneezing, coughing, talking or being suctioned. The droplets can then contact and infect eyes, mouth, nose or upper respiratory tract if we breathe them in. Large droplets settle rapidly, but can then be picked up on hands and transferred to mouth, nose or open skin areas. Small droplets may be able to stay floating in the air for a longer time and spread diseases like TB and measles.

Spread by Fecal - Oral Route

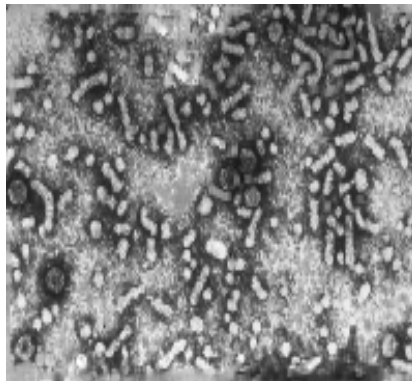
The pathogen may be in the infected persons stool and then contaminate the environment. This may include food or water, and lead the next person to be infected when they eat or drink. Most importantly, the pathogen can get from the environment onto a persons hands and then mouth, where it can cause disease.

Spread by Vehicle or Vector

We have discussed mosquitoes in West Nile Virus. There are other diseases like Malaria that are spread this way by the mosquito **vector**. An example of **vehicle** that can spread a pathogen is the food that gets touched by infected hands then carries the organism from one place to person to another.

Spread by Sexual Contact

This is an example of **person to person** contact. Many diseases can be spread this way. Pathogens that cause venereal disease are very sensitive and rapidly die when exposed to conditions outside the body. Therefore, the spread of illnesses like gonorrhea requires the most intimate of human contact.



Spread by Direct Inoculation

If blood is shared organisms in it can spread to a new host. Our blood donor system is designed to protect us from this problem. However, sharing IV needles or sharing tattoo needles can spread pathogens by direct inoculation. If blood with pathogens in it is exposed to broken skin or mucus membranes of eyes, mouth, vagina or rectum, it is possible for transfer of pathogens to occur. There are pathogens that are not viable outside blood but can be transferred this way. These include viruses causing Hepatitis B and C and HIV. As these diseases are not easily identified, we need to act as though all blood and bloody body fluids contain the pathogens and use **standard precautions**.

METHODS TO REDUCE SPREAD OF INFECTION

To protect ourselves and the persons we care for, we should use standard precautions with all persons, and specific precautions for infection where we know how they are spread (e.g. West Nile Virus protection).

Standard Precautions - apply to blood and all body fluids that may or may not contain blood (sweat and saliva are not usually a problem). Also, recognize risks of any area of skin that is not intact and mucus membranes such as eyes, nose, mouth, vagina and rectum.

- ♦ Use protective equipment , particularly gloves
- ♦ dispose of items carefully
- ♦ wash hands

“The single most important way to stop spread of infection is to wash your hands.”

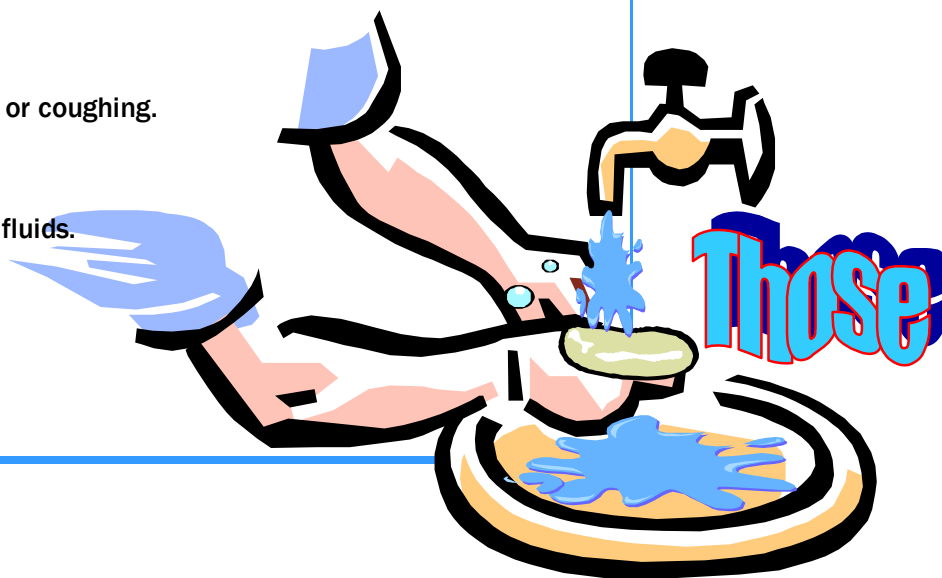
The single most important way to stop spread of infection is to wash your hands. Remember it blocks spread of pathogens by **direct** and **indirect contact**. It can reduce spread of pathogens on items that we touch. Clean hands do not transfer pathogens picked up from surfaces where they have settled from airborne droplets. This is important in times when colds and flu are common.

WASH HANDS BEFORE:

- ♦ preparing or eating food.
- ♦ handling contact lenses and dentures.
- ♦ caring for others.
- ♦ touching open skin
- ♦ putting on gloves.

Wash**WASH HANDS AFTER:**

- ♦ going to the bathroom.
- ♦ blowing nose, sneezing or coughing.
- ♦ caring for others.
- ♦ touching wounds.
- ♦ handling blood or body fluids.
- ♦ removing gloves.
- ♦ changing diapers.
- ♦ handling a pet.
- ♦ handling garbage.

**WASH HANDS BY:**

- ♦ wetting hands.
- ♦ applying soap.
- ♦ rubbing or scrubbing all areas at least 10–15 seconds.
- ♦ rinsing with warm water.
- ♦ patting them dry.

May use waterless alcohol based hand sanitizer instead.

Hands!!!**OTHER MEANS TO REDUCE SPREAD OF INFECTION:**

- ♦ cover mouth if coughing or sneezing.
- ♦ care for food safely - cook properly, cool, store cold.
- ♦ avoid IV drug use and sharing needles.
- ♦ use condoms for sexual contact.
- ♦ careful use of antibiotics can reduce the number of resistant organisms.
- ♦ immunization increases a person's resistance to an invading pathogen.
- ♦ isolation can be needed (e.g. a person with chickenpox should not visit a person with immune disorder).